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IN THE CLAIMS:

1. (currently amended) A method of manufacturing a rotor for a high vacuum turbomolecular pump, comprising the steps of:

providing a workpiece comprising bar 1, said bar being made of a material suitable for producing of said rotor;

forging said workpiece to obtain a generally cylindrical body(1,11) through an axial compression (P₁), said cylindrical body (1,11) being a semi-finished part having homogeneous mechanical properties; and

mechanically working said generally cylindrical body (1,11) for forming one or more set of radial peripheral vanes therein;

wherein during the axial compression (P₁) of said workpiece, a radial expansion thereof is prevented.

2. (canceled)

3. (original) The method of claim 1, wherein said rotor is a bell-shaped rotor.

4. (currently amended) The method of claim 3, further comprising the steps of:

subsequently forging to form forming a cavity (13) within said cylindrical body (1,11), said cylindrical body being a cylindrical billet (11) by means of a punch (12) that is forced into the billet (11), while preventing at the same time radial expansions of the billet through confinement in a mold.

5. (currently amended) The method of claim 4, wherein the step of forming said cavity (13) comprises extending said cavity (13) over a part of said cylindrical billet and refining by subsequent mechanical working.

6. (previously presented) The method of claim 5, further comprising the step of forming of a central bore on a bottom of said cavity and subsequently providing a thermal treatment for improving mechanical properties of said bell-shaped rotor.

7. (original) The method as claimed in any preceding claim, further comprising a step of processing said at least one set of radial peripheral vanes by one or more techniques selected from the group consisting of milling, turning and electric discharge machining.

8-9 (canceled)